

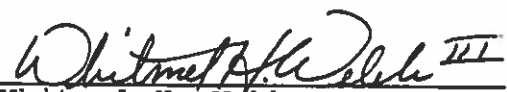
FEASIBILITY STUDY

Gastonia
SR 2446 (Hoffman Road)
From Duke Street to NC 279 (New Hope Road)
Gaston County
U-2712

Prepared by
Program Development Branch
Division of Highways
N. C. Department of Transportation



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Date

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I. GENERAL DESCRIPTION

This preliminary study describes proposed improvements to SR 2446 (Hoffman Road) in Gastonia. A location map of the studied area and recommended project alignment is shown as Figure 1. The proposed 64 foot face to face 5 lane curb and gutter section would extend from Duke Street (a non system, city street) to NC 279 (New Hope Road), a distance of 1.2 miles, and includes constructing a bridge on new location over Catawba Creek. Two segments of the project are proposed generally symmetrical to the existing roadway centerline and two segments are proposed on new location. The recommended right of way width is 90 feet. The total cost, for right of way and construction, is estimated to be \$4,120,320.

This study is the initial step in the planning and design process for this project and is not the product of an exhaustive environmental investigation or design effort. The purpose of this study is to describe the problem and an attainable solution; and provide cost estimates for the right of way and construction required to realize the solution.

II. NEED FOR PROJECT

The purpose of this project is to improve current and projected capacity and accident problems on SR 2446. SR 2446 is a two lane roadway with an 18 foot wide pavement and shoulders that vary in width from 0 to 5 feet. The posted speed limit is 35 mph. The existing bridge over Catawba Creek was built in 1967 and provides a horizontal clearance between bridge rails of 24.5 feet. This bridge is located on a short tangent section between two horizontal curves, one of which has a radius of only 270 feet.

This project was requested by the City of Gastonia and is consistent with the Gastonia Thoroughfare Plan. SR 2446, as realigned by this project, is designated a future Major Urban Arterial in the Gastonia Thoroughfare Plan. Existing SR 2446 is designated an Urban Minor Arterial in the North Carolina Statewide Functional Classification System.

Roadside land use on SR 2446 is predominantly light to medium density residential development. A media center for the Gaston County Schools is located on SR 2446, and Terra Drive which intersects SR 2446 is the only entrance to Terra Heights, a residential subdivision.

The estimated Average Daily Traffic (ADT) on SR 2446 between Duke Street and NC 279 for the years 1991 and 2011 (the design year) are 5,700 vehicles per day (vpd) and 10,300 vpd respectively. SR 2446 is currently operating at level of service D during daily peak hour periods, and unless the roadway capacity is increased, the level of service will deteriorate to level E within the next 20 years. With the recommended improvements it is estimated that SR 2446 will operate at level of service B through the year 2011.

During the period from December 1, 1987 through November 30, 1990 there were 71 accidents reported on SR 2246 between Duke Street and NC 279. This resulted in an accident rate of 1060 accidents per 100 million vehicle miles (Acc/100 MVM), compared to a statewide average of 344.0 Acc/100 MVM for all urban secondary routes during 1990. There were no fatalities reported during the period, but 30 of the accidents resulted in injuries. The most prevalent accident types were ran-off-road (44%), angle (21%), and rear-end (18%) accidents. The wider cross section with center turn lane and the improved horizontal alignment proposed for SR 2446 will reduce the potential for these types of accident.

III RECOMMENDATIONS

It is recommended to widen and relocate SR 2446, a two lane two-way road, to a 64 foot wide face-to-face, five lane roadway with curb and gutter. The new widened section is to extend from Duke Street to NC 279, a distance of 1.2 miles. A right of way width of 90 feet on SR 2446 is proposed. No change in control of access is proposed. No residences or businesses will be relocated.

Two segments of the project will be built on new location as shown on Figure 1. The first segment begins at the project's southern terminus, the Duke Street-Gaston Day School Road intersection, and runs north about 1000 feet to SR 2446. The other segment on new location will pass through Terra Heights subdivision where the alignment follows right of way dedicated for this purpose. This segment is approximately six-tenths of a mile in length and will effect an improvement in the horizontal roadway alignment as shown on Figure 1. A new bridge over Catawba Creek with a clear roadway width of 64 feet and 4 foot sidewalks on each side is proposed in this segment.

Minor traffic signal revisions will be required at the NC 279 intersection (the north project terminus) to accommodate the proposed multilane cross section on SR 2446. The intersection of Terra Drive and the project will be controlled with stop signs on Terra Drive. Approximately 700 feet from the south project terminus,

existing Hoffman Road will intersect the project at a right angle forming a Tee type intersection that will be controlled by stop signs on eastbound Hoffman Road.

V. ADDITIONAL COMMENTS

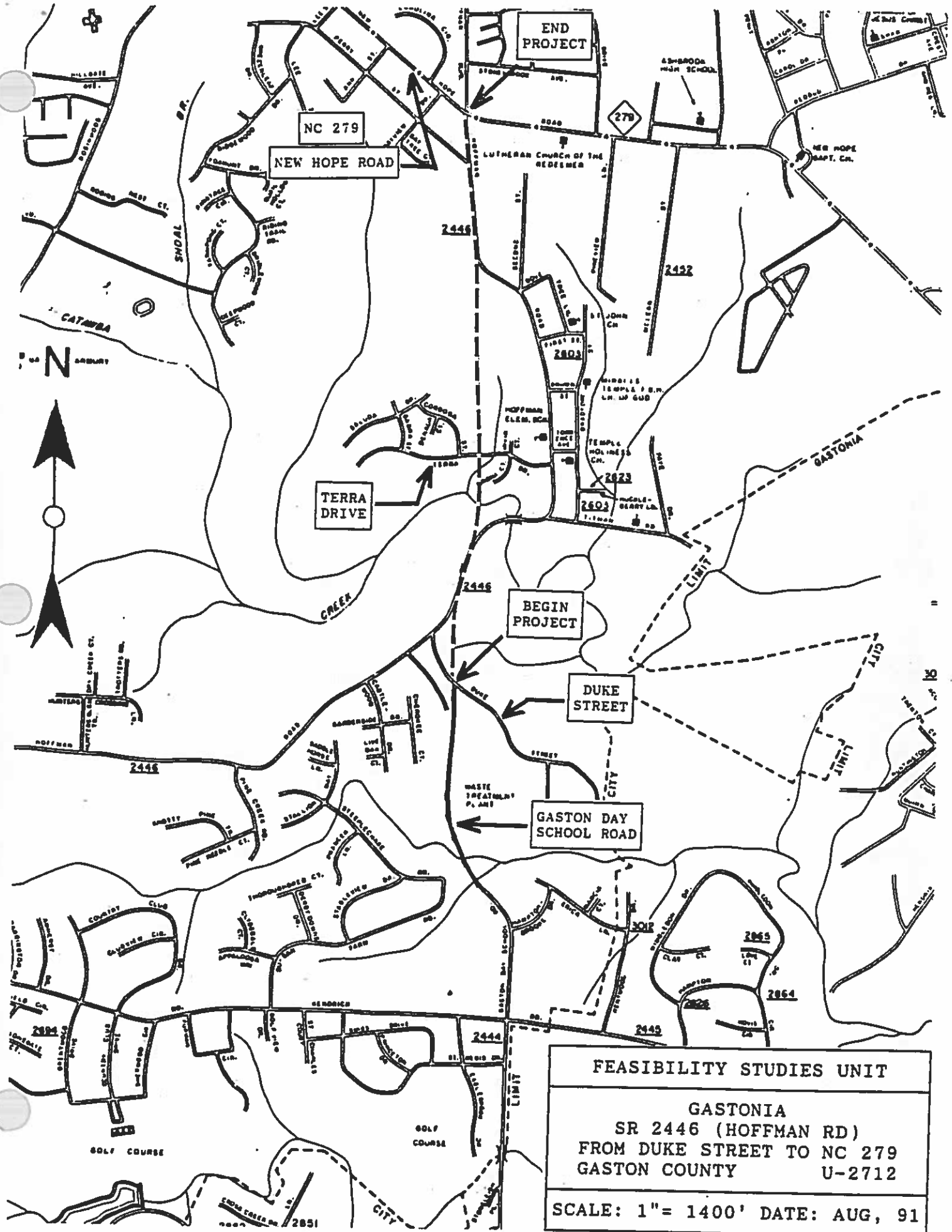
No significant environmental issues were identified during this study. A Corp of Engineers Section 404 Permit may be required for the proposed bridge over Catawba Creek. The existing bridge will remain in place to serve local traffic.

Through the Terra Heights Subdivision property an 80 foot wide right of way has been dedicated, although a width of 90 feet is required to contain the recommended 5 lane cross section.

VI. COST ESTIMATES

Right of Way	\$ 640,000
Construction.....	3,480,000

Total Estimated Cost.....	\$4,120,000



FEASIBILITY STUDIES UNIT	
GASTONIA	
SR 2446 (HOFFMAN RD)	
FROM DUKE STREET TO NC 279	
GASTON COUNTY	U-2712
SCALE: 1" = 1400' DATE: AUG, 91	

FIGURE 1